TC 9-21-01(093-89D-01)

SOLDIERS

Improvised Explosive Device (IED) Awareness Guide

IRAQ
&
AFGHANISTAN
Theaters of Operation

Chief of Ordnance
US Army Ordnance Corps

EOD Training Department
Redstone Arsenal, AL

February 2004

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Aberdeen Proving Ground, MD
09 February 2004

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&
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Theaters of Operation

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WARNING

This Soldiers reference guide provides general Improvised Explosive Device (IED) awareness, possible characteristics and safety information. It will:

Provide a visual depiction of some Improvised Explosive Devices (IED) encountered in support of the Iraq (OIF) and Afghanistan (OEF) theaters.

Provide Soldiers with the basic know how in relation to: "Reacting to a Possible Improvised Explosive Device (IED).

This reference guide does *NOT* supercede any Standing Operating Procedures (SOPs), Orders, or Military Directives.

Preface

The purpose of this guide is to give Commanders, Leaders and Soldiers a training tool representing some of the Improvised Explosive Devices (IED) used in both the Iraq and Afghanistan theaters of operation.

The intent of this guide is to support readiness, unit training, operational planning, and awareness as well as provide information in relation to Reacting to a Possible Improvised Explosive Device (IED) common task 093-401-5050. Both training and awareness are a proven and effective force protection tool as well as a combat multiplier.

This guide is not all inclusive and should not be used as a sole source of information. Commanders and leaders must remain abreast of current intelligence, tactics, techniques and procedures (TTPs) and local command standing operating procedures (SOPs) available in particular areas of operation in relation to the Improvised Explosive Device threat.

This guide does not cover IED firing / fuzing systems (internal design) or Explosive Ordnance Disposal (EOD) tactics, techniques and procedures. This guide is derived from multiple unclassified source documentation and materials.

The proponent of this Soldiers reference guide is: The Chief of Ordnance, US Army Ordnance Corps, Aberdeen Proving Ground, MD. The custodian of information is the US Army Ordnance Munitions and Electronics Maintenance School (OMEMS), 59TH Ordnance Brigade, Explosive Ordnance Disposal Training Department (EODTD). Submit recommendations for changes, updates, deletions, and / or additions to this publication on DA Form 2028 to:

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Unless otherwise stated, masculine nouns and pronouns do not refer exclusively to men.

Chapter 1

Background

Improvised Explosive Devices (IEDs) may be constructed out of any available material and contain various fillers to include; explosive, chemical, biological, or hazardous materials. Improvised Explosive Devices may range in size from a cigarette pack or carton to a large vehicle.

The only limitations an enemy bomber faces are: availability of resources, personal ingenuity, and the degree or extent of "know how" required to facilitate construction and in some cases application of an Improvised Explosive Device.

Improvised Explosive Devices are non-standard, and usually fabricated from common materials. The mass quantities of cached, captured enemy ammunition (CEA) and stockpiled munitions within the Iraq and Afghanistan theaters of operation provide the explosive materials to "would be" enemy bombers.

General mitigation measures in relation to the IED threat:

1. Trust your instincts. If something does not seem right it probably isn't. Be aware of your surroundings (situational awareness).

2. Watch the locals in your area of operation; Are the familiar locals in the area? Are people moving away from you or your element acting or appearing nervous? Most bombers don't blow up their own neighborhoods.

3. Be aware of news crews in the area for no apparent reason. Most bombers like their work filmed, but do not like pictures of themselves.

4. Before each and every convoy or patrol, brief your personnel on the latest IED threat intelligence. ***Brief your personnel each and every time.***

a. Ascertain what types of items are currently in use?
b. Known techniques, patterns and likely locations of emplacement?
c. Where in the area have items previously been placed?
d. Intelligence on your current route of march (primary and alternates)?

5. Rehearse actions (battle drill) for reacting to a possible Improvised Explosive Device.

6. ***Wear personal protective equipment (vests, helmets and eye protection). They save lives!***

7. Maintain speed and movement whenever possible.

8. Maintain dispersion while conducting either mounted or dismounted operations.

9. Be cautious of choke points, vehicle breakdowns, bridges, one way roads, traffic jams, sharp turns etc…

10. If something stops movement, either mounted or dismounted, survey your immediate area for possible Improvised Explosive Devices.

Reaction upon encountering an item that is deemed a possible Improvised Explosive Device:

Note: This reference guide does *NOT* supercede any Standing Operating Procedures (SOPs), Orders, or Military Directives.

1. STOP all movement toward the "Possible Improvised Explosive Device (IED)" and immediately evaluate your surrounding area for possible secondary Improvised Explosive Devices.

a. Do not approach the "Possible Improvised Explosive Device"

b. Do not attempt to move the "Possible Improvised Explosive Device"

c. If possible, avoid using any communication / electronic equipment within the previously established and *SECURE* exclusion area.

2. Establish security:

a. Establish an area around the "Possible Improvised Explosive Device". Adjust the exclusion area based on METT-TC, local command policy / guidance, tactics, techniques and procedures and standing operating procedures (SOPs).

b. Search initial secure area for possible secondary explosive device(s) / hazards, while maintaining security.

c. Identify potential enemy force observation/vantage points.

d. Seek all available manmade or natural frontal and overhead cover.

e. Avoid establishing a “reaction” pattern.

f. Forward information to Higher HQ using standard 9-line UXO Report.

g. Continue mission IAW Higher HQ guidance

WARNING:

Recognition features for IEDs are ever changing based on the enemy's capabilities and available resources.

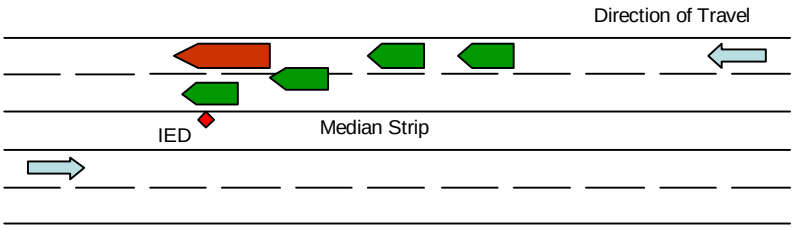
THESE PHOTOS ARE MEANT ONLY TO SERVE AS A GUIDE!

The following photos and diagrams depict possible techniques and methods of employment for Improvised Explosive Devices.

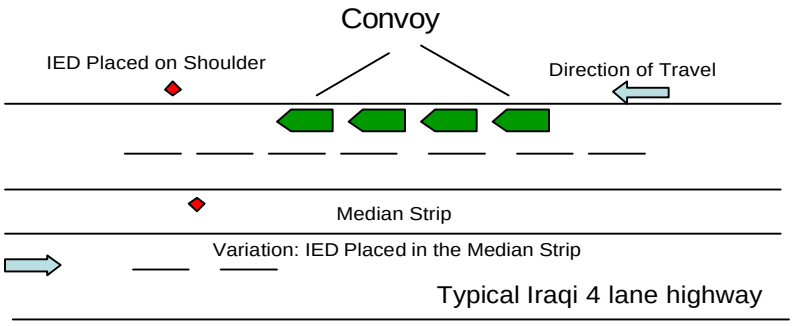
Background 1-4

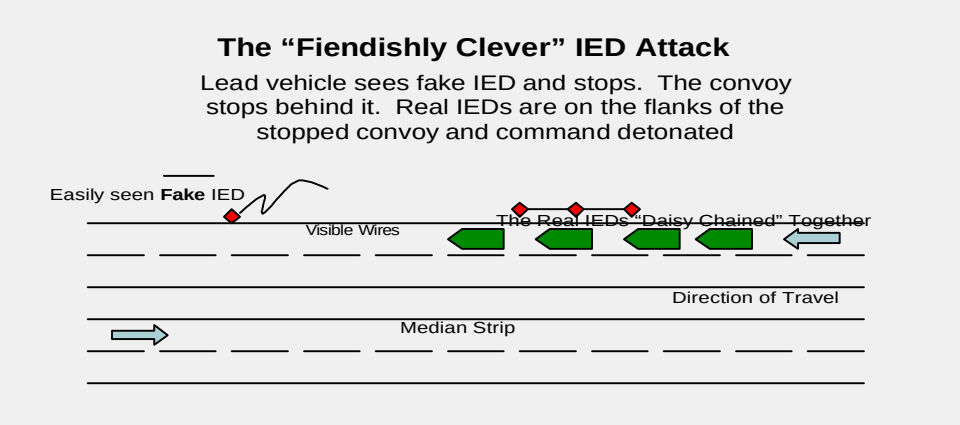
The "Broken Down Vehicle" IED Attack

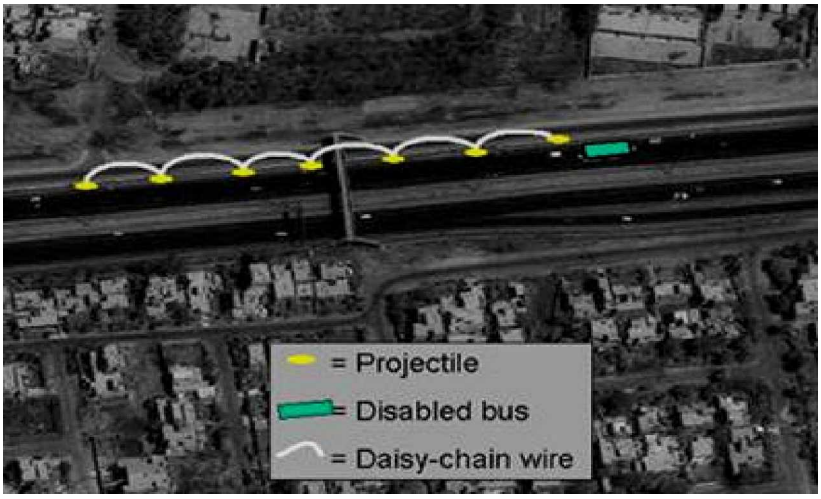
"Broken Down / Disabled" vehicle channels / forces convoy toward IED



The Basic "No Frills" IED Attack




The "Fiendishly Clever" IED Attack
Lead vehicle sees fake IED and stops. The convoy stops behind it. Real IEDs are on the flanks of the stopped convoy and command detonated
Easily seen **Fake** IED
Visible Wires
The Real IEDs "Daisy Chained" Together
Direction of Travel
Median Strip


= Projectile
= Disabled bus
= Daisy-chain wire

Chapter 2
IRAQ Theater of Operation

The following photos were taken from multiple unclassified source documentation and materials from the Iraq theater of operation.

130 mm Projectile concealed in burlap style sack (sand bag)

130 mm Projectile concealed in a plastic bag

Grenade found behind poster of Saddam Hussein

Modified aluminum can made into a hand grenade with hand grenade fuze

Projectile with electric blasting cap in the fuze well

Projectile embedded in plaster of paris (POP) housing to simulate concrete covered with grass

Projectile embedded in plaster of paris (POP) housing to simulate concrete

105 mm Projectile concealed by rocks on the road side

Improvised directional explosive device in clear plastic trash bag

Improvised directional explosive device

Improvised directional (shape charge) explosive device

Projectiles inside of a roadside culvert pipe

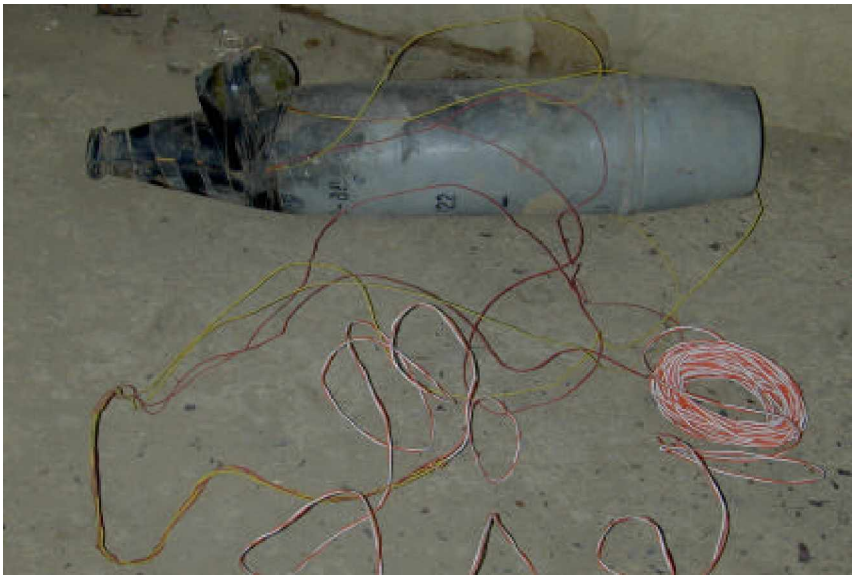
Modified Mortar with tripwire attached to grenade fuze

Modified Mortar with tripwire attached to grenade fuze

Former Soviet Union 122mm Projectiles

Top view of former Soviet Union 122mm Projectiles modified to accept a blasting cap in the cast high explosive (HE)

Plastic shipping caps for former Soviet Union 122mm Projectiles modified to accept a blasting cap



Former Soviet Union 122mm Projectile with modified plastic shipping plug and hand grenade, both items modified to accept electric blasting caps.

Former Soviet Union 122mm projectile with plastic explosive in the fuze well modified to accept electric blasting cap.

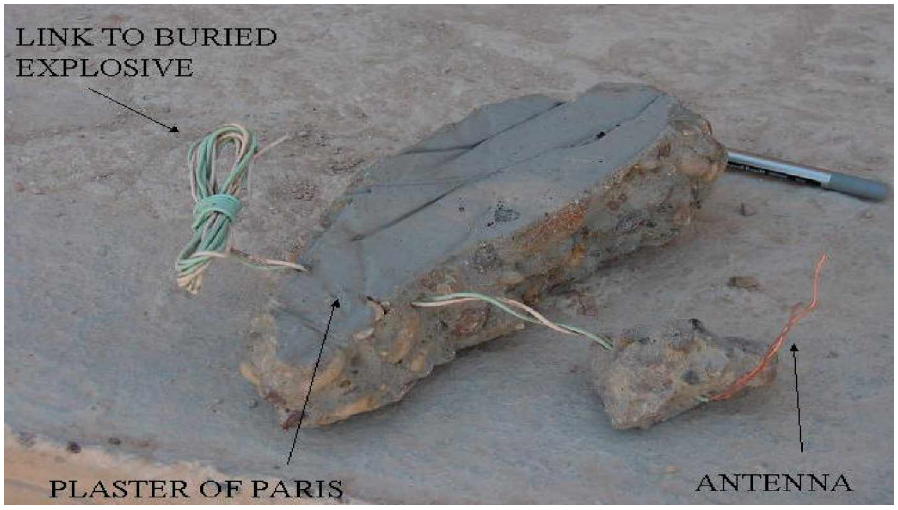
Former Soviet Union 130mm projectile with plastic explosive in the fuze well modified to accept electric blasting cap, concealed in plastic bag.

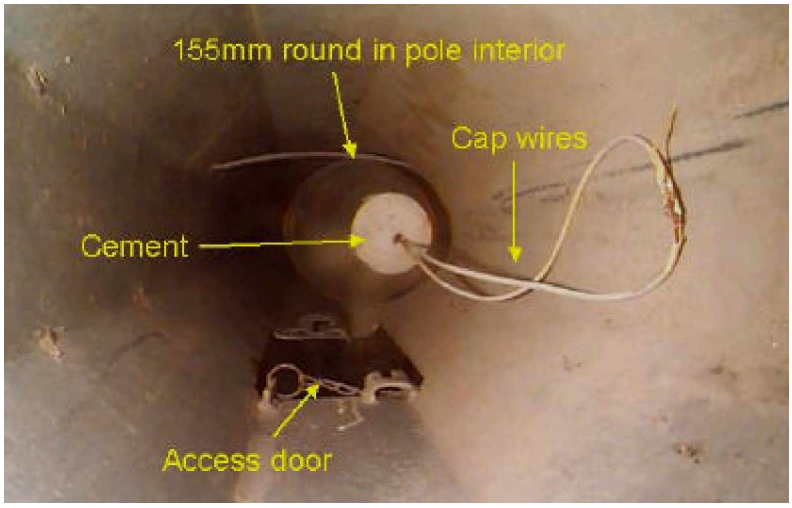
Cigarette carton filled with plastic explosives

Steel container with “home made” explosives

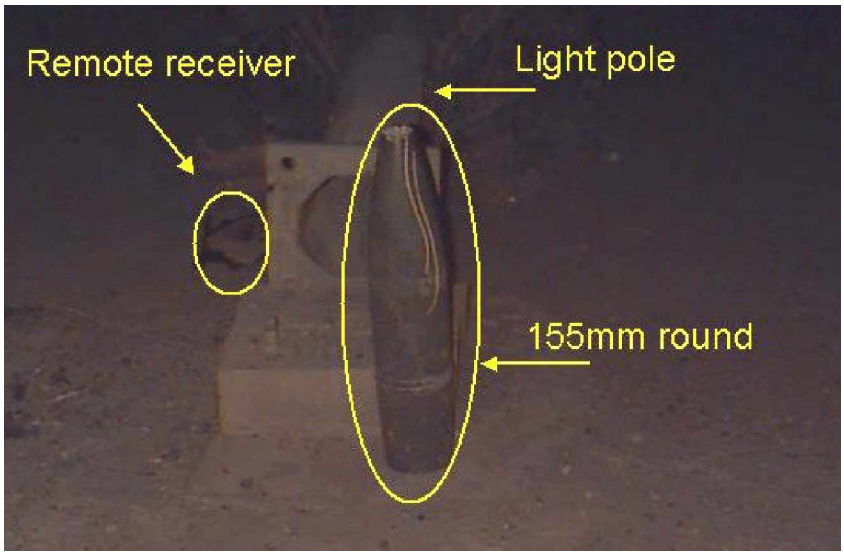
Steel container with “home made” explosives

Modified Pepsi cola aluminum can with pyrotechnic fuse





155mm Projectile inside of downed street light pole along road side



155mm Projectile outside of downed street light pole along road side

Chapter 3
AFGHANISTAN Theater of Operation

The following photos were taken from multiple unclassified source documentation and materials from the Afghanistan theater of operation.

TC-6 anti-tank (AT) Landmine attached to former Soviet Union FAB-250 high explosive (HE) bomb

Propane tanks used as main charges for Improvised Explosive Devices (IEDs)

Modified TC-6 Anti - Tank (AT) Landmine

Improvised Explosive Device buried in soft pack roadway

Motorcycle with two Anti-Tank (AT) Landmines concealed under the seat

Vehicle bomb strewn with approximately 300 lbs of explosive

Paint cans and similar items are filled with explosive and used as Improvised Explosive Devices (IEDs)

107mm rockets modified to fire on friendly forces

Improvised Explosive Device plastic boxes with detonating cord and stereo speaker magnets, to affix on metal target.

Former Soviet Union 60mm Mortar with hand grenade fuze

Hand grenade wedged between a rock and a TC-6 anti-tank (AT) landmine

Propane tank with detonating cord attached to two
TC-6 anti-tank (AT) landmines

APPENDIX A

React to a "Possible Improvised Explosive Device (IED)"
093-401-5050

Warning:

All soldiers must receive a theater specific IED threat brief to successfully accomplish this task.

Specific identification features for IEDs are ever changing based on the enemy's capabilities and available resources.

Task: React to a Possible Improvised Explosive Device (IED)

Condition: During military operations you encounter a "Possible Improvised Explosive Device (IED)".

Standard: Properly establish initial exclusion area, security, and report "Possible Improvised Explosive Device (IED)" to Higher HQ with 100% accuracy.

Danger:

Do not attempt to move the "Possible Improvised Explosive Device (IED)"

Danger:

Do not approach the "Possible Improvised Explosive Device (IED)"

Danger:

If possible, avoid using any communication/electronic equipment within established exclusion area

Appendix A **React to a Possible Improvised Explosive Device (IED)….A-1**
Common Task 093-401-5050

Warning:
Any of the above "Dangers" may cause a "Possible Improvised Explosive Device (IED)" to explode

Performance Steps

1. Establish minimum initial exclusion area of 300 meters around "Possible Improvised Explosive Device (IED)".

Warning:

Adjust exclusion areas based on METT-TC (See Figure 1 & 2 as a Basic Guide)

2. Establish security:

a. Search secure area for possible secondary explosive device(s)/hazards, while maintaining security.

b. Identify potential enemy force observation/vantage points.

c. Seek all available manmade or natural frontal and overhead cover.

d. Avoid establishing a "reaction" pattern.

3. Forward information to Higher HQ using standard 9-line UXO Report (See Figure 1-6).

4. Continue mission IAW Higher HQ guidance.

Evaluation Preparation: Grade the soldiers as a "go" or "no-go" in each area. Explain the incorrect action for any "no-go".

Performance Measures (Go – No Go)

1. Upon encountering a "Possible Improvised Explosive Device (IED)":

Appendix A **React to a Possible Improvised Explosive Device (IED)….A-2**
Common Task 093-401-5050

a. Ensured all movement towards “Possible Improvised Explosive Device (IED)” stopped.

b. Established initial minimum 300 meter exclusion area.

c. Established security.

2. Submitted standard 9-line UXO Report to Higher HQ.

3. Did not move “Possible Improvised Explosive Device (IED)”.

4. Did not approach “Possible Improvised Explosive Device (IED)”.

5. Did not use any communication or electronic devices within initial exclusion area.

6. Continued mission IAW Higher HQ guidance.

Evaluation Guidance: Tell the soldier that ; “Possible Improvised Explosive Device (IED)” are in use in the AOR. Place the Soldier in a scenario that will require them to encounter a “Possible Improvised Explosive Device (IED)”.

Appendix A **React to a Possible Improvised Explosive Device (IED)….A-3**
Common Task 093-401-5050

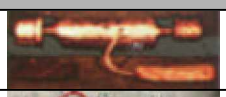
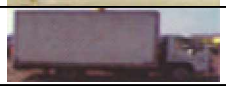
Threat Description		Explosives Mass (TNT equivalent)	Building Evacuation Distance	Outdoor Evacuation Distance
	Pipe Bomb	5 lbs 2.3 kg	70 ft 21 m	850 ft 259 m
	Suicide Belt	10 lbs 4.5 kg	90 ft 27 m	1,080 ft 330 m
	Suicide Vest	20 lbs 9 kg	110 ft 34 m	1,360 ft 415 m
	Briefcase/Suitcase Bomb	50 lbs 23 kg	150 ft 46 m	1,850 ft 564 m
	Compact Sedan	500 lbs 227 kg	320 ft 98 m	1,500 ft 457 m
	Sedan	1,000 lbs 454 kg	400 ft 122 m	1,750 ft 534 m
	Passenger/Cargo Van	4,000 lbs 1,814 kg	640 ft 195 m	2,750 ft 838 m
	Small Moving Van/ Delivery Truck	10,000 lbs 4,536 kg	860 ft 263 m	3,750 ft 1,143 m
	Moving Van/Water Truck	30,000 lbs 13,608 kg	1,240 ft 375 m	6,500 ft 1,982 m
	Semi trailer	60,000 lbs 27,216 kg	1,570 ft 475 m	7,000 ft 2,134 m

Figure 1

Appendix A React to a Possible Improvised Explosive Device (IED)….A-4
Common Task 093-401-5050

Threat Description		LPG Mass/Volume	Fireball Diameter	Safe Distance
	Small LPG Tank	20 lbs/5 gal 9 kg/19 lb	40 ft 12 m	160 ft 48 m
	Large LPG Tank	100 lbs/25 gal 45 kg/95 lb	69 ft 21 m	276 ft 84 m
	Commercial/Residential LPG Tank	2,000 lbs/500 gal 907 kg/1,893 lb	184 ft 56 m	736 ft 224 m
	Small LPG Truck	8,000 lbs/2,000 gal 3,630 kg/7,570 lb	292 ft 89 m	1,168 ft 356 m
	Semi tanker LPG	40,000 lbs/10,000 gal 18,144 kg/37,850 lb	499 ft 152 m	1,996 ft 608 m

Figure 2

Standard 9-line UXO Report

Line 1: Date time group discovered: (Command policy will dictate *Local* or *Zulu* time).

Line 2: Reporting Activity (UIC / Unit designation). Location (8-digit grid): *(include: landmarks, reference points, or street addresses).*

Line 3: Contact Method: Radio Freq / Call Sign or Telephone Number. (If using phone number, provide name).

Line 4: Type of Munition: (Dropped, Projected, Placed, or Thrown).

Line 5: NBC Contamination: Yes or No, known or suspected NBC Contamination. If yes, report type of agent if known / identified.

Line 6: Resources Threatened: (What resource is threatened - is it a critical asset?).

Line 7: Impact on Mission: (How the UXO is affecting the mission).

Line 8: Protective Measures Taken: (Unit emplaced protective measures).

Line 9: Recommended Priority: (Immediate, Indirect, Minor, or No Threat).

Appendix A React to a Possible Improvised Explosive Device (IED)….A-5
Common Task 093-401-5050

Sample Report:

Line 1: *121300LMAR98*

Line 2: *1-75th Infantry Bn, C-Co, EP2134567891, 150 meters South of the grid referenced road junction.*

Line 3: 49.7000, Tripwire 60 or 1-800-435-6789, SFC Snuffy

Line 4: Placed, Possible Improvised Explosive Device (IED)

Line 5: None

Line 6: MSR Speedway

Line 7: Unit cannot conduct re-supply operations, MSR is in passable

Line 8: Constructed sandbag barricade and evacuated non-essential personnel 300 meters. Mission essential personnel are in protective gear, all are utilizing frontal and overhead cover

Line 9: Immediate

Minimum Required Reporting Information: At a minimum the report must contain:

Proper format is not as important as getting the information to the higher HQ.

(a) *"Who"* discovered the item (Point of Contact)

(b) *"What"* item is (type / Sub-group)

(c) *"Where"* the UXO is (Location / 8-digit Grid)

(d) *"When"* the item was discovered

(e) Recommended priority (Immediate, Indirect, Minor, or No Threat)

Appendix A **React to a Possible Improvised Explosive Device (IED)….A-6**
Common Task 093-401-5050

Glossary

AT	**anti-tank**
CEA	**captured enemy ammunition**
EOD	**explosive ordnance disposal**
HE	**high explosive**
HQ	**head quarters**
IAW	**in accordance with**
IED	**improvised explosive device**
LBS	**pounds**
METT-TC	**mission, enemy, terrain and weather, troops and support available, and civil considerations.**
MM	**millimeters**
OEF	**Operation Enduring Freedom**
OIF	**Operation Iraqi Freedom**
POP	**Plaster of Paris**
SOP	**Standing Operating Procedures**
TO	**Theater of Operation**
TTP	**Tactics Techniques and Procedures**
UXO	**Unexploded Ordnance**

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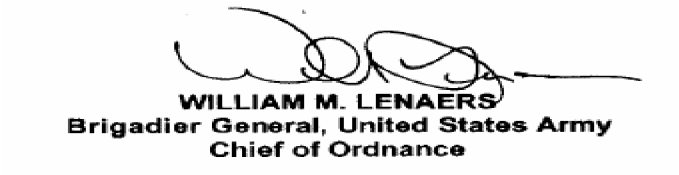
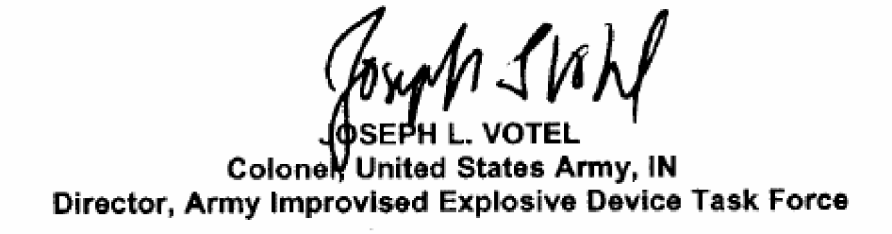


WILLIAM M. LENAERS
Brigadier General, United States Army
Chief of Ordnance

Official:



JOSEPH L. VOTEL
Colonel, United States Army, IN
Director, Army Improvised Explosive Device Task Force

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By Order of the Secretary of the Army:

PETER J. SCHOOMAKER
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the Secretary of the Army

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